# MISSOURI MONTHLY VITAL STATISTICS

## *Provisional Statistics*

*From The*

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# *Focus. . .Deaths of Missourians at Age 85 and Over*

Average life expectancy in this country increased nearly 30 years during the twentieth century.[1] This was largely a triumph of public health, although advances in medical care and standard of living also contributed. Tuberculosis, typhoid, gastroenteritis and diphtheria were major causes of death in 1900. Infants and children often did not survive to adulthood.

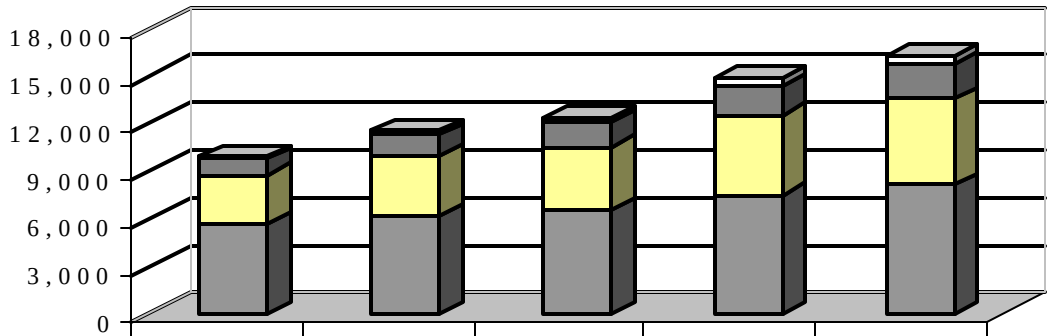
Thanks to vaccines, purer food and water, better nutrition, antibiotics and other advances, life expectancy in Missouri has risen from 53.0 years in 1911 to 75.7 years in 1999. Nearly one Missourian in three lives to age 85, compared with only one in 20 in 1911.[2]

One way to study this extension of life is by examining its other side, death. Death certificates filed with the Missouri Department of Health in the past two decades continue to show growth in longevity. From 1980 to 1999, the number of deaths of persons age 85 and over increased 63.5 percent (see Graph 1) while the number of Missouri residents in that age group increased 60.6 percent.

These increases partly reflect an increase in the population generally, but they mostly reflect an increase in the proportion of Missourians living to age 85. The percent of Missouri resident deaths for which the decedent was 85 or older grew from 20.1 percent to 29.1 percent in the time period studied.

When mortality statistics are presented by age group, the last category is generally "85 and over." Formerly a tiny minority, that age group has grown large enough for meaningful statistical study. To examine trends, we will use data for years at five-year intervals from 1980 through 1995, and for 1999. In addition, we will study patterns by race, gender, cause, marital status and location of death.

**Graph 1: Deaths at Age 85 and Older: Missouri Residents 1980-1999**




| | 1980 | 1985 | 1990 | 1995 | 1999 |
|---|---|---|---|---|---|
| Age 100+ | 180 | 241 | 328 | 443 | 476 |
| Age 95-99 | 1,017 | 1,293 | 1,514 | 1,865 | 2,173 |
| Age 90-94 | 3,086 | 3,834 | 3,938 | 4,995 | 5,438 |
| Age 85-89 | 5,634 | 6,139 | 6,577 | 7,517 | 8,125 |

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### Age group

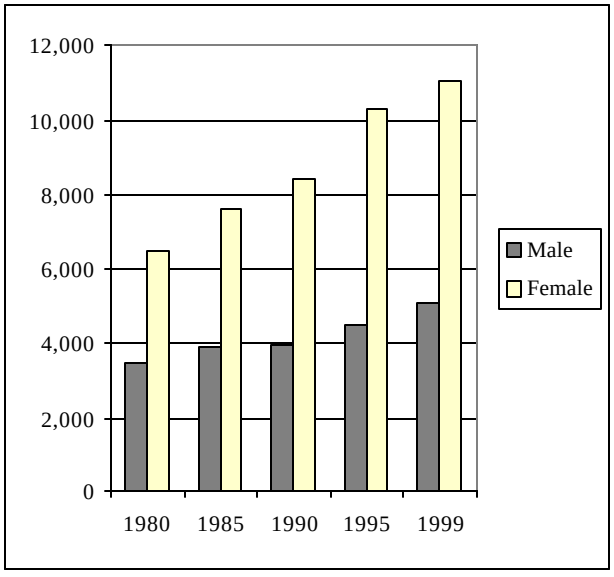
Besides the overall increase in deaths in the 85+ age group, Graph 1 shows that within that group there has been an increase in survival to the older ages. Deaths of persons aged 85-89 increased 44 percent during the years studied, and deaths of persons aged 90-94 increased 76 percent. The two older groups, however, increased even more sharply: deaths of persons aged 95-99 doubled, and deaths of persons aged 100 and older nearly tripled, from 180 to 476. (There are about fifty-five thousand Missouri resident deaths per year.)

### Gender

Males have higher death rates for all ages from infancy on, so of course there are more women than men in the older age groups. Forty percent of Missouri resident females reach the age of 85, while only 25 percent of their male counterparts do.[3]

This gender imbalance became more pronounced between 1980 and 1999 among living Missourians age 85 and over. While the male population increased by an estimated 50 percent, the female population increased about 65 percent. The increases in deaths in that age group showed an even sharper difference: the number of male deaths increased 47.3 percent, while the number of female deaths increased 72.2 percent. (See Graph 2.)

**Graph 2: Deaths Age 85 and Older by Gender: Missouri Residents 1980-1999**




### Marital Status

Given the gender disparity in deaths, it is not surprising that a large majority of decedents age 85 and over were widowed, and that there were over three times as many widows (36,478) as widowers (9,908) for the period examined. Of women dying at age 85 or older, 83.0 percent were widowed, while only 47.4 percent of men were.

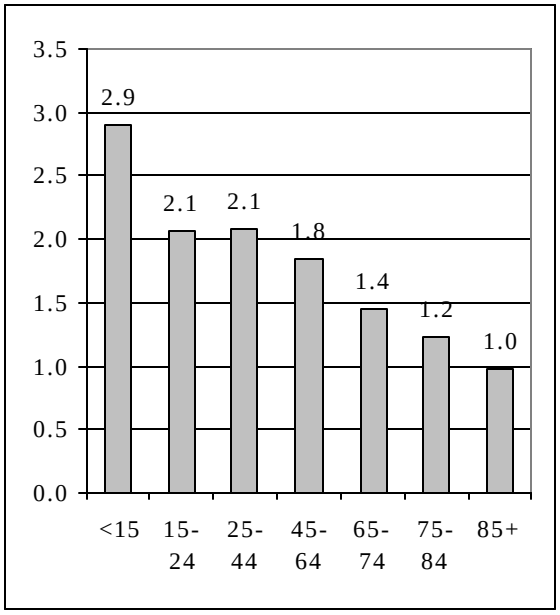
Older men were much more likely to be married at death than older women (44.2 percent versus 6.0 percent) and less likely to never have been married at the time of death (4.9 percent of men and 7.4 percent of women). The percentage divorced at the time of death was about the same for men and women, but increased during the period from 2.4 percent to 4.2 percent, reflecting the increasing divorce rate in the population generally.

### Race

Racial disparity in most measures of health continues to be a major public health concern. Among those measures, mortality is no exception. Death rates for African-Americans nationally and in Missouri are higher–often dramatically so–for infants, children, and young and middle-aged adults.

Graph 3 shows that in 1999 African-American infants and children under 15 in Missouri had a death rate nearly three times that of white infants and children, but the death rate of African-American Missourians who do survive to age 85 is about the same as that of their white counterparts.

**Graph 3: Ratio of Black to White Age-Specific Death Rates: Missouri Residents 1999**




### Leading Causes of Death

Death certificates reflect the accomplishments of public health not only in the age of decedents but also in their causes of death. From the causes described at the beginning of the century, there has been a shift to chronic diseases. For the last several decades, the three leading causes of death have been heart disease, cancer, and stroke. Although they can strike at any age, they are predominantly diseases of old age.

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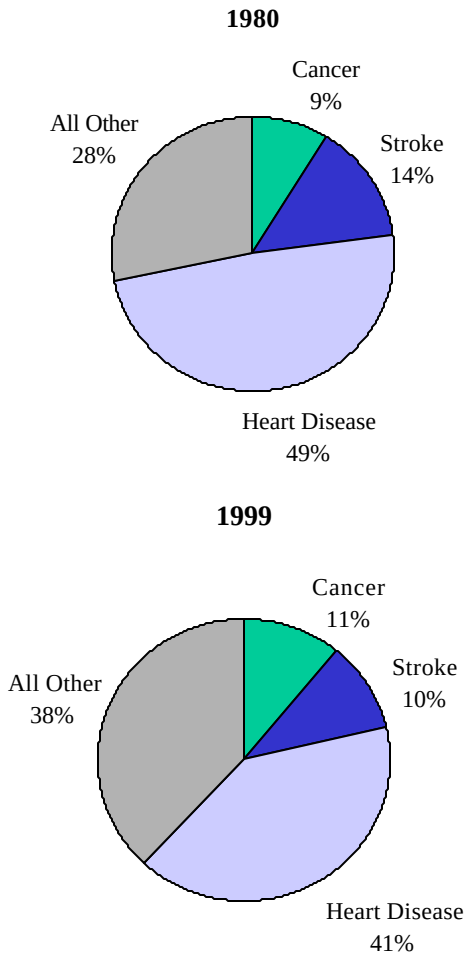
During the nineteen years we are exploring, there has been a slight redistribution among those three causes, as shown in Graph 4. Heart disease and stroke accounted for a decreasing *proportion* of deaths age 85 and over, although the *number* of deaths in each category increased. Cancer surpassed stroke as the second leading cause among decedents 85 and older.

**Graph 4: Deaths Age 85+ by Cause: Missouri Residents 1980 and 1999**

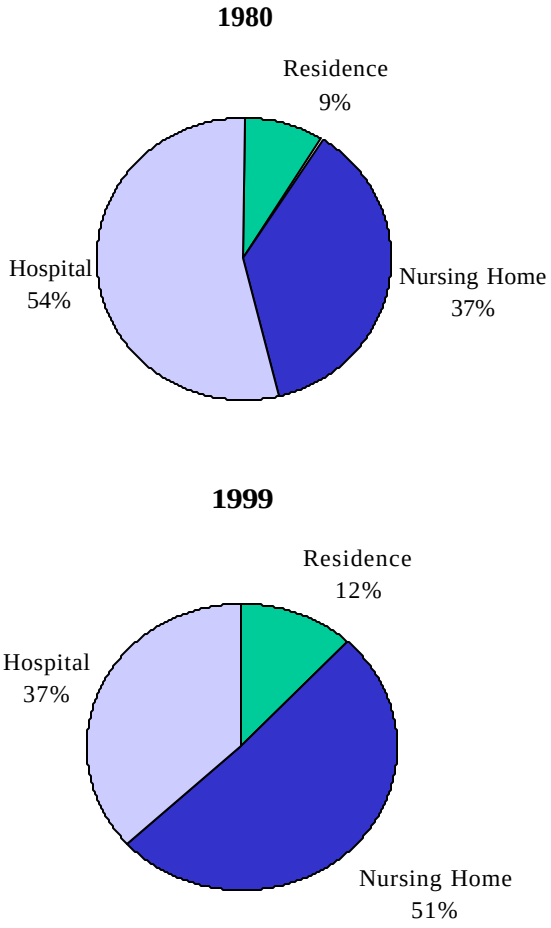



## Location of death

Since 1980, there has also been a steady shift in the location of death for Missouri residents age 85 and over. While the number of such deaths increased by 63 percent, the number which took place in hospitals increased only 11 percent, and the number of deaths in residences and in nursing homes more than doubled. (Less than one percent of deaths in this age group were in other places.)

The location where death takes place does not necessarily reflect the decedent's residence. For example, a person who has spent several years in a nursing home may move to a hospital when a health condition becomes life-threatening and then die in the hospital. However, trends in location of death may reflect a shift in attitudes toward end-of-life care and efforts to reduce cost.

**Graph 5: Deaths 85+ by Location: Missouri Residents 1980 and 1999**




## Conclusion

Death certificates give us an accurate measure of the length of lives, but they cannot tell us much about the quality of life in those years. The advances, which have done so much to increase the quantity of our years, may or may not improve their quality as well. Efforts in public health and medicine must continue in order to maintain these advances and to reduce disparities within the population.

**Sources**:

[1] *National Vital Statistics Reports*: Robert N. Anderson, "United States Life Tables, 1998," Vol. 48, No. 18.

[2] *Missouri Monthly Vital Statistics*: "Life Expectancy in Missouri," March 1994; Vol. 28 (No.1).

[3] *Missouri Vital Statistics 1999*: Table 29: Abridged Life Table for Total Population: Missouri 1999."

# Provisional Vital Statistics for January 2001

**LIVE BIRTHS** increased in January as 7,589 Missouri babies were born compared with 6,251 in January 2000. Cumulative births for the 12 months ending with January also show an increase as 78,187 were born, or 1.8 percent more than the 76,804 born one year earlier.

**DEATHS** increased slightly in January, but decreased by 4.3 percent for the 12 months ending with January.

The **NATURAL INCREASE** in January was 1,484 (7,589 births minus 6,105 deaths). For the 12 months ending with January, the natural increase was 23,929, nearly 19 percent highter than the previous year's figure.

**MARRIAGES** decreased in January, reflecting a long-term downward trend as the provisional 2000 rate of 7.8 per 1,000 population is the lowest rate since 1958.

**DISSOLUTIONS OF MARRIAGE** decreased in January, but increased for the 12 months ending with January.

**INFANT DEATHS** increased in January, but the provisional 2000 rate of 7.1 per 1,000 live births represents a record low for Missouri.

**PROVISIONAL RESIDENT VITAL STATISTICS FOR THE STATE OF MISSOURI**

| Item | January | | | | 12 months ending with January | | | | | | | Provisional | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | | Rate* | | Number | | | Rate* | | | | 2000 | |
| | 2000 | 2001 | 2000 | 2001 | 1999 | 2000 | 2001 | 1998 | 1999 | 2000 | 2001 | Number | Rate* |
| **Live births** | 6,251 | 7,589 | 12.8 | 15.8 | 74,723 | 76,804 | 78,187 | 13.5 | 13.6 | 13.8 | 14.0 | 76,300 | 13.6 |
| **Deaths** | 6,021 | 6,105 | 12.3 | 12.7 | 52,429 | 56,674 | 54,258 | 10.0 | 9.5 | 10.2 | 9.7 | 54,500 | 9.7 |
| **Natural increase** | 230 | 1,484 | 0.5 | 3.1 | 22,294 | 20,130 | 23,929 | 3.5 | 4.1 | 3.6 | 4.3 | 23,900 | 4.3 |
| **Marriages** | 2,711 | 2,495 | 5.6 | 5.2 | 43,646 | 45,081 | 43,509 | 8.1 | 7.9 | 8.1 | 7.8 | 43,800 | 7.8 |
| **Dissolutions** | 2,423 | 2,084 | 5.0 | 4.3 | 25,191 | 25,225 | 26,125 | 4.7 | 4.6 | 4.5 | 4.7 | 25,000 | 4.5 |
| **Infant deaths** | 45 | 70 | 7.2 | 9.2 | 579 | 594 | 566 | 7.8 | 7.7 | 7.7 | 7.2 | 540 | 7.1 |
| **Population base** (in thousands) | ... | ... | 5,595 | 5,642 | ... | ... | ... | 5,456 | 5,503 | 5,551 | 5,599 | ... | 5,595 |

* Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1000 estimated population. The infant death rate is based on the number of infant deaths per 1000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.